



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2022-1243; Project Identifier MCAI-2022-00674-T]**

**RIN 2120-AA64**

### **Airworthiness Directives; Embraer S.A. (Type Certificate Previously Held by Yaborã Indústria Aeronáutica S.A.; Embraer S.A.) Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to adopt a new airworthiness directive (AD) for certain Embraer S.A. Model ERJ 170 airplanes. This proposed AD was prompted by a report of uncommanded setting of the barometric reference in both primary flight displays (PFDs) due to the architecture of data communication of the Control I/O modules, which interconnect the display controllers to the air data system. This proposed AD would require installing updated Primus EPIC software, as specified in an Agência Nacional de Aviação Civil (ANAC) AD, which is proposed for incorporation by reference. The FAA is proposing this AD to address the unsafe condition on these products.

**DATES:** The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West

Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For material that will be incorporated by reference (IBR) in this AD, contact National Civil Aviation Agency (ANAC), Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 – Centro Empresarial Aquarius – Torre B – Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 – São José dos Campos – SP, Brazil; telephone 55 (12) 3203-6600; email [pac@anac.gov.br](mailto:pac@anac.gov.br); website [anac.gov.br/en/](http://anac.gov.br/en/). You may find this material on the ANAC website at [sistemas.anac.gov.br/certificacao/DA/DAE.asp](http://sistemas.anac.gov.br/certificacao/DA/DAE.asp). You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available in the AD docket at [regulations.gov](http://regulations.gov) by searching for and locating Docket No. FAA-2022-1243.

### **Examining the AD Docket**

You may examine the AD docket at [regulations.gov](http://regulations.gov) by searching for and locating Docket No. FAA-2022-1243; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

**FOR FURTHER INFORMATION CONTACT:** Hassan Ibrahim, Aerospace Engineer, Large Aircraft Section, FAA, International Validation Branch, 2200 South 216th St., Des Moines, WA 98198; telephone 206-231-3653; email [hassan.m.ibrahim@faa.gov](mailto:hassan.m.ibrahim@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2022-1243; Project Identifier MCAI-2022-00674-T” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to [regulations.gov](https://www.regulations.gov), including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

## **Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Hassan Ibrahim, Aerospace Engineer, Large Aircraft Section, FAA, International Validation Branch, 2200 South 216th St., Des Moines, WA 98198; telephone 206 231 3221; email [Hassan.M.Ibrahim@faa.gov](mailto:Hassan.M.Ibrahim@faa.gov). Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

## **Background**

The ANAC, which is the aviation authority for Brazil, has issued ANAC AD 2022-05-03, effective May 25, 2022 (ANAC AD 2022-05-03) (also referred to as the MCAI), to correct an unsafe condition for certain Model ERJ 170-100 LR, -100 STD, -100 SE, and -100 SU airplanes; and Model ERJ 170-200 LR, -200 SU, -200 STD, and -200 LL airplanes.

This proposed AD was prompted by a report of uncommanded setting of the barometric reference in both PFDs due to the architecture of data communication of the Control I/O modules, which interconnect the display controllers to the air data system. The possibility of erroneous indications for both pilots, combined with possible adverse meteorological conditions could result in an increase of flightcrew workload. The FAA is proposing this AD to address this condition, which could interfere with the decisions

taken by the flightcrew during critical phases of flight, and possibly result in reduced controllability of the airplane. See the MCAI for additional background information.

### **Relationship Between this Proposed AD and AD 2020-05-22**

This NPRM would not supersede AD 2020-05-22, Amendment 39-19872 (85 FR 15936, March 20, 2020) (AD 2020-05-22). Rather, the FAA has determined that a stand-alone AD would be more appropriate to address the changes in the MCAI. This NPRM would require installing updated Primus EPIC software. ANAC AD 2022-05-03 specifies that accomplishment of that AD “covers the accomplishment of [terminates] ANAC AD 2019-10-02” (which corresponds to FAA AD 2020-05-22). Both AD 2020-05-22 and this proposed AD require installing updated Primus EPIC software standards, and the FAA has determined that the actions in AD 2020-05-22 must be done prior to accomplishing the actions in this proposed AD. Accomplishment of the proposed actions in this proposed AD on an airplane would then terminate all of the requirements of AD 2020-05-22 for that airplane only.

### **Related Service Information Under 1 CFR Part 51**

ANAC AD 2022-05-03 specifies procedures for installing updated Primus EPIC software. This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **FAA’s Determination**

This product has been approved by the aviation authority of another country and is approved for operation in the United States. Pursuant to the FAA’s bilateral agreement with the State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop in other products of the same type design.

## **Proposed AD Requirements in this NPRM**

This proposed AD would require accomplishing the actions specified in ANAC AD 2022-05-03 described previously, except for any differences identified as exceptions in the regulatory text of this proposed AD.

## **Explanation of Required Compliance Information**

In the FAA’s ongoing efforts to improve the efficiency of the AD process, the FAA developed a process to use some civil aviation authority (CAA) ADs as the primary source of information for compliance with requirements for corresponding FAA ADs. The FAA has been coordinating this process with manufacturers and CAAs. As a result, the FAA proposes to incorporate ANAC AD 2022-05-03 by reference in the FAA final rule. This proposed AD would, therefore, require compliance with ANAC AD 2022-05-03 in its entirety through that incorporation, except for any differences identified as exceptions in the regulatory text of this proposed AD. Service information required by ANAC AD 2022-05-03 for compliance will be available at regulations.gov by searching for and locating Docket No. FAA-2022-1243 after the FAA final rule is published.

## **Costs of Compliance**

The FAA estimates that this proposed AD would affect 668 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

### **Estimated costs for required actions**

<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
8 work-hours X \$85 per hour = \$680	\$0	\$680	\$454,240

## **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator.

Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**Embraer S.A. (Type Certificate Previously Held by Yaborã Indústria Aeronáutica**

**S.A.; Embraer S.A.):** Docket No. FAA-2022-1243; Project Identifier

MCAI-2022-00674-T.

**(a) Comments Due Date**

The FAA must receive comments on this airworthiness directive (AD) by  
[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL  
REGISTER].

**(b) Affected ADs**

This AD affects AD 2020-05-22, Amendment 39-19872 (85 FR 15936, March 20, 2022) (AD 2020-05-22).

**(c) Applicability**

This AD applies to Embraer S.A. (Type Certificate previously held by Yaborã Indústria Aeronáutica S.A.; Embraer S.A.) Model ERJ 170-100 LR, -100 STD, -100 SE, and -100 SU airplanes; and Model ERJ 170-200 LR, -200 SU, -200 STD, and -200 LL airplanes, certificated in any category, as identified in Agência Nacional de Aviação Civil (ANAC) AD 2022-05-03, effective May 25, 2022 (ANAC AD 2022-05-03).

**(d) Subject**

Air Transport Association (ATA) of America Code 31, Instruments.

**(e) Unsafe Condition**

This AD was prompted by a report of uncommanded setting of the barometric reference in both primary flight displays due to the architecture of data communication of the Control I/O modules, which interconnect the display controllers to the air data



system. The FAA is issuing this AD to address this condition, which could interfere with the decisions taken by the flightcrew during critical phases of flight, and possibly result in reduced controllability of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Requirements**

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, ANAC AD 2022-05-03.

**(h) Exceptions to ANAC AD 2022-05-03**

(1) Where ANAC AD 2022-05-03 refers to its effective date, this AD requires using the effective date of this AD.

(2) The “Alternative methods of compliance (AMOC)” section of ANAC AD 2022-05-03 does not apply to this AD.

(3) Where paragraph (d) of ANAC AD 2022-05-03 specifies you must use certain service information for software installation, this AD specifies to use that service information as applicable, except as provided in paragraphs (a)(1) and (2) of ANAC AD 2022-05-03.

**(i) Terminating Action for AD 2020-05-22**

Accomplishing the actions required by this AD on an airplane terminates all requirements of AD 2020-05-22 for that airplane only.

**(j) Additional AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as

appropriate. If sending information directly to the International Validation Branch, send it to the attention of the person identified in paragraph (k)(2) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer:* For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, International Validation Branch, FAA; or ANAC; or ANAC's authorized Designee. If approved by the ANAC Designee, the approval must include the Designee's authorized signature.

**(k) Additional Information**

(1) For ANAC AD 2022-05-03, contact National Civil Aviation Agency (ANAC), Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 – Centro Empresarial Aquarius – Torre B – Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 – São José dos Campos – SP, Brazil; telephone 55 (12) 3203-6600; email [pac@anac.gov.br](mailto:pac@anac.gov.br); website [anac.gov.br/en/](http://anac.gov.br/en/). You may find this ANAC AD on the ANAC website at [sistemas.anac.gov.br/certificacao/DA/DAE.asp](http://sistemas.anac.gov.br/certificacao/DA/DAE.asp). You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. This material may be found in the AD docket at [regulations.gov](http://regulations.gov) by searching for and locating Docket No. FAA-2022-1243.

(2) For more information about this AD, contact Hassan Ibrahim, Aerospace Engineer, Large Aircraft Section, FAA, International Validation Branch, 2200 South 216th St., Des Moines, WA 98198; telephone 206-231-3653; email [hassan.m.ibrahim@faa.gov](mailto:hassan.m.ibrahim@faa.gov).

Issued on September 23, 2022.

Christina Underwood, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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